MG2014 Advanced Welding Technology, Modulus 2 6.0 credits

Svetsteknologi, högre kurs, modul 2

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for MG2014 valid from Spring 2016

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Registered to MG1010 Introductory Welding Technology, general course

Basic eligibility and 120 cr in Engineering

knowledge of Swedish B/Swedish 3

or the corresponding

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After passing this course, the student will be able to:

- thoroughly describe materials technology of welding
- describe different metals and their properties in welded constructions
- explain quality techniques at production by welding
- explain current computer systems and cost for welding operations
- explain applications of strength of materials on welded constructions
- describe applications of fracture mechanics on welded constructions, pressure vessels etc.
- perform design calculations on a welded component
- analyse defect tolerance of a casualty critical construction

Course contents

Materials (mild steel, stainless steel, aluminum, cast iron, etc.) and their behavior during welding. Welding additives (different types for different welding processes, materials), Metrology, standards and documentation.

Disposition

The classes are mainly concentrated to two full days of studies, in average every second week during two months . In between classes, homework assignments and preparation work have to be completed. High degree of attendance to classes is required.

Course literature

MNC Handbok 15 Svetsning av stål (utgåva 3), Svetsningens materialteknologi (Hannerz, KTH),
Goda råd vid aluminiumsvetsning (Svetskommissionen Hb 46)
samt utdelat material i kursen

Examination

- ÖVN1 - Exercise, 1.5 credits, grading scale: P, F

- TEN1 - Examination, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

Passed written examination (TEN1; 3 cr)
Aopproved lab work (LAB1; 3 cr)

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.